REMARKS

Amendments to the Claims

Claims 1 and 19 have been amended, support for which can be found throughout the specification and in the claims as originally filed. The amendments to the claims do not introduce prohibited new matter.

Interview

Applicants would like to thank Examiner Steadman and his supervisor Manjunath Rao for hosting an interview with Applicants' representatives on March 1, 2011. During the interview, Applicants discussed the pending grounds of rejection, as well as possible amendments and arguments to overcome the rejections. Applicants present herein amendments to the claims and arguments in accordance with the matters discussed.

Claim Objections

Claims 1 and 19 were objected to for formalities. On page 3 of the Office Action, the Examiner suggested amendments to address overcoming the objections. Applicants have amended the claims as suggested herein. Accordingly, it is submitted that the basis for these objections has been overcome.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Office Action on page 4 rejected claim 19 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite.

The Office Action on pages 4-5 stated that recitation of percent identity was unclear with regard to functional equivalents. The Examiner suggested recitation of only type III HPLC-12 AFP as that is defined as polypeptides with 80% identity to SEQ ID NO: 1 as set forth in the specification on page 9. Applicants have amended the claim as suggested. It is therefore submitted that the basis for this rejection has been overcome. Withdrawal of the rejection is respectfully requested.

Rejection Under 35 U.S.C. § 112, First Paragraph

A. The Office Action on page 5 rejected claims 1, 6, 7, 12, 14-16, and 19 under 35 U.S.C. § 112, first paragraph, as allegedly failing the enablement rejection.

During the interview of March 1, 2011, Examiner Steadman indicated that amending the claims such that the yeast cell was "made" deficient in pmt1 and/or pmt2 would overcome the basis for this rejection because it conveys how the yeast is deficient for pmt1 and/or pmt2 . Applicants have

accordingly amended the claims as suggested. It is therefore submitted that the basis for this rejection has been overcome. Withdrawal of the rejection is respectfully requested.

B. The Office Action on page 5 rejected claims 1, 6, 7, 12, 14-16, and 19 under 35 U.S.C. § 112, second paragraph, as allegedly failing the written description requirement.

During the interview of March 1, 2011, Examiner Steadman indicated that specifying that if the claims were amended such that the yeast cell was "made" deficient in pmt1 and/or pmt2 the basis for this rejection would be overcome. Applicants have accordingly amended the claims as suggested. It is therefore submitted that the basis for this rejection is moot. Withdrawal of the rejection is respectfully requested.

Rejection Under 35 U.S.C. § 103(a)

The Office Action on page 13 rejected claims 1, 6, 7, 12, 14-16, and 19 under 35 U.S.C. § 103(a) as allegedly being obvious under Chapman in view of Ng and Gentzsch.

During the interview of March 1, 2011, Applicants disclosed that the claimed subject matter was conceived of and reduced to practice prior to the publication of Ng. Submitted herewith is a Declaration under 37 CFR 1.131 which establishes that the inventors had invented the claimed subject matter prior to publication of Ng. Accordingly, Ng is not available as prior art.

Accordingly, one skilled in the art could not arrive at the claimed invention based on Chapman and Gentzsch alone as they do not disclose or suggest all of the features of the amended claims. As acknowledged on page 14 of the Office Action, Chapman does not disclose or suggest pmt deficient yeast. Gentzsch teaches that pmt1 and pmt2 form a heterodimer and are required for O-glycosylation, but Gentzsch does not teach or suggest producing a protein in pmt deficient yeast to improve activity. Gentzsch does not teach that affecting pmt1 and/or pmt2 will affect type III AFP activity. Accordingly, one skilled in the art would have no reason or suggestion to produce the type III AFP in a pmt deficient yeast.

In addition, during the interview of March 1, 2011, Examiner Steadman indicated that further references may be substituted for Ng for teaching pmt deficient yeast. Examiner Steadman later provided Applicants with the reference of Tanner. Applicants have reviewed Tanner, but submit it does not render the claimed invention obvious. Tanner suggests reducing glycosylation to improve protein yield. Tanner does not disclose how to alter glycosylation. Tanner also does not disclose that altering glycosylation may affect protein activity. The working examples of the specification, pmt1 and/or pmt2 deficiency affected protein activity without altering the actual yield of protein. Further, as evidenced by Chapman, the type III AFP protein yield was satisfactory, and accordingly, one skilled in the art would have no

reason to attempt to alter the actual amount of protein being produced. Moreover, as demonstrated by the attached articles, one skilled in the art would have expected wild type yeast to properly producing active exogenous proteins (see Gemeren (1995) J. Biotechnol. 40: 155-162; Frenken (2000) J. Biotechnol. 78: 11-21; Giuseppin (1993) App. Environ. Microbiol. 59: 52-59; and, Edens (1984) Cell 37: 629-633, all attached hereto). Accordingly, the combination of Tanner with any of the above cited references would not render the claimed invention obvious to one of skill in the art.

Applicants submit that the claimed invention is non-obvious over the cited references. It is therefore respectfully requested that this rejection be withdrawn.

Double-Patenting

The Advisory Action did not mention whether the prior rejection based on double-patenting would be maintained. In any event, Applicants submit that claims 1, 6-7, 8, 12, and 14-17 cannot be rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent 7,297,516 in view of Ng and Gentzsch.

U.S. Patent 7,297,516 is the patent issued from the U.S. national stage application of Chapman (PCT/EP96/02936 or WO 97/02343). The deficiencies of Chapman, Ng, and Gentzsch are discussed herein and in arguments previously presented on the record. As discussed above, Ng is not available as prior art. Further, as stated above, one skilled in the art could not arrive at the claimed invention through any combination of Chapman and Gentzsch alone. Therefore, the claimed invention is not obvious over these cited references. It is respectfully requested that this rejection also be withdrawn.

Conclusion

The foregoing amendments and remarks are thought to obviate the basis for the Examiner's rejections and to otherwise place the application in condition for allowance. Accordingly, Applicants respectfully request reconsideration and allowance of the pending claims. Should an interview be helpful to further prosecution of this application, the Examiner is invited to telephone the undersigned.

Dated: **June 8, 2011**
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Respectfully submitted,
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